

Docket No.: 13836-00001-US
(PATENT)

AMENDMENTS TO THE CLAIMS

Listing of claims:

1. (Currently Amended) A system for a two dimensional ~~dimension~~ bar code having information units arranged in the form of a matrix for synchronous omni-directional information, characterized in that, comprising:

vertical synchronous information units disposed at two ~~of~~ opposing borders in said matrix, wherein ~~the~~ optical characteristics of the neighboring units are different and the units at different borders constitute a pair of vertical synchronous information units;

horizontal synchronous information units disposed at another two opposing borders of said matrix, wherein ~~the~~ optical characteristics of the neighboring units are different and the units at different borders constitute a pair of horizontal synchronous information units;

directing information units having a characteristic shape and/or optical characteristic for identifying a scanning direction and having a relative positional relationship with said vertical ~~information~~ synchronous information units and horizontal ~~information~~ synchronous information units; and

coding coded information units inside said matrix, wherein the base of each unit is at or near ~~the nearby to~~ the junction of the central line of a pair of the vertical synchronous information units and the central line of a pair of the horizontal synchronous information units.

2. (Currently amended) The system for a two dimensional ~~dimension~~ bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 1, characterized in that, the optical characteristics for each unit are ~~is~~ its color attribute and said base is the center of each unit.

3. (Currently Amended) The system for a two dimensional ~~dimension~~ bar code having information units arranged in the form of a matrix for synchronous omni-directional

Docket No.: 13836-00001-US
(PATENT)

information according to claim 1, characterized in that, said vertical synchronous information units and horizontal synchronous information units are all distributed at said matrix border, and said directing information units are at the center of the matrix vertex and the border.

4. (Currently amended) The system for a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 3, characterized in that, each of said vertical synchronous information units, horizontal synchronous information units and coding eeded information units is a square, said directing information unit is selected ~~any one~~ from a rectangle, a square or a circle.

5. (Currently amended) A method for identifying the system for a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information as claimed in claim 1, characterized in that, the identifying device identifies an input image of said system for a two dimensional dimension bar code for synchronous omni-directional information in accordance with the following steps:

- (1) determining its position in the image based on the ~~characteristics~~ characteristic shape and/or optical characteristics of a directing information unit;
 - (2) determining a linking line between each pair of the vertical synchronous information units and the horizontal synchronous information units based on the specific relative positional relationship of the directing information unit with the vertical synchronous information unit and the horizontal synchronous information unit as well as the optic characteristics of the vertical synchronous information unit and the horizontal synchronous information unit;
 - (3) reading optical characteristic information at or near the vicinity junction of the linking line between the centers of said pair of vertical synchronous information units and the intersection between said pair of horizontal synchronous information units;
- and

Docket No.: 13836-00001-US
(PATENT)

(4) decoding the optical characteristic information at or near the vicinity of the intersection junction read by step (3) in accordance with the order identified by the characteristic shape and/or optical characteristics of the directing information unit, so as to recover the coded information.

6. (Currently amended) The method for identifying the system for a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 5, characterized in that, the optical characteristics for each unit are is its color attribute and said base is the center of each unit.

7. (Currently amended) The method for identifying the system for a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 5, characterized in that, the optical characteristics for each unit are is its fluorescent attribute and said base is the center of each unit.

8. (Currently amended) The method for identifying the system for a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 6, characterized in that, said vertical synchronous information units and horizontal synchronous information units are all distributed at said matrix border, and said directing information units are at the matrix vertex and the center of the border, the identifier determines the directing information unit at the border center by the directing information unit at neighboring matrix vertex.

9. (Currently amended) The method for identifying the system for a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 8, characterized in that, each of said vertical synchronous information units, horizontal synchronous information units and coding coded information units is a square, said directing information unit is selected any one

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Docket No.: 13836-00001-US
(PATENT)

from a rectangle, a square or a circle, said identifier determines a scanning direction through comparing its geometric shape and its position.

10. (Currently amended) The method for identifying the system for a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 9, characterized in that, the base location of the vertical synchronous information units and the horizontal synchronous information units at a border are determined by a border searching algorithm.

11. (Currently amended) The system for a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 2, characterized in that, said vertical synchronous information units and horizontal synchronous information units are all distributed at said matrix border, and said directing information units are at the center of the matrix vertex and the border.

12. (Currently amended) The system for a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 11, characterized in that, each of said vertical synchronous information units, horizontal synchronous information units and coding eeded information units is a square, said directing information unit is selected any one from a rectangle, a square or a circle.

13. (Currently amended) The method for identifying a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 7, characterized in that, said vertical synchronous information units and horizontal synchronous information units are all distributed at said matrix border, and said directing information units are at the matrix vertex and the center of the border,

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Docket No.: 13836-00001-US
(PATENT)

the identifier determines the directing information unit at the border center by the directing information unit at neighboring matrix vertex.

14. (Currently amended) The method for identifying a two dimensional dimension bar code having information units arranged in the form of a matrix for synchronous omni-directional information according to claim 13, characterized in that, each of said vertical synchronous information units, horizontal synchronous information units and coding eeded information units is a square, said directing information unit is selected any one from a rectangle, a square or a circle, and said identifier determines a scanning direction through comparing its geometric shape and its position.

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